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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,044	01/18/2006	Chris Wyland	US03 0251 US2	3935
24738	7590	06/16/2006	EXAMINER	
PHILIPS ELECTRONICS NORTH AMERICA CORPORATION INTELLECTUAL PROPERTY & STANDARDS 1109 MCKAY DRIVE, M/S-41SJ SAN JOSE, CA 95131			RODELA, EDUARDO A	
			ART UNIT	PAPER NUMBER
			2826	

DATE MAILED: 06/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/565,044	<b>Applicant(s)</b> WYLAND, CHRIS	
	<b>Examiner</b> Eduardo A. Rodela	<b>Art Unit</b> 2826	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 7 and 10-12 is/are rejected.
- 7) ☐ Claim(s) 4, 5, 8, 9 and 13-16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

*Minhloan Tran*  
**Minhloan Tran**  
**Primary Examiner**  
**Art Unit 2826**

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/18/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the reference plane of the package **surrounding** the IC chip (Claim 1), must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **area** of the grounding arch and the **area** of IC device (Claim 3), must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **additional** ground arch provided at 90 degrees rotation to the first ground arch (Claims 13 and 14), must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, encapsulation of the grounding arch and the die (Claim 12), must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Figures 1, 5, and 6 are objected to because the axes and other details of the graph and flow charts are not labeled clearly, it is acknowledged that they are disclosed

in the specification, but it is not apparent upon first glance as to the nature of the information presented in the figures.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

The disclosure is objected to because of the following informalities: As recited on page 5, lines 18-20, imply that the conductive bonds 350a and 350b are disposed on the die, but as Figure 4 shows the conductive bonds 350a and 350b are not on the die [330], but on the substrate [310].

Also, the disclosure is objected to because of the following informalities: As recited on page 5, 350a and 350b are called “conductive bonds (lines 16 and 17)” and “ground traces (line 27).” As 350a and 350b appear to be solder balls or some sort of bonding material, they would more correctly be called “conductive bonds.”

Appropriate correction is required.

### ***Claim Objections***

Claim 6 is objected to because the “ground trace” is originally called the “reference trace” in claim 1. Appropriate correction is required.

Claim 7 is objected to because of the following informalities: The word “furthers” should be changed to “further.” Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 6 states, “the grounding arch is coupled to at least one **grounding location on the integrated circuit device**, wherein the grounding location includes, the grounding trace and grounding pads.” However, the specification and drawings (Figure 4) disclose that the grounding traces 340a, 340b, 350a, and 350b are located on the substrate [310] and not on a grounding location [380] on the integrated circuit device [330].

Claim 6 recites the limitation " the grounding arch is coupled to at least one **grounding location on the integrated circuit device**, wherein the grounding location includes, the grounding trace and grounding pads " in lines 2 and 3. There is insufficient antecedent basis for this limitation in the claim. It is unclear as to where the grounding trace is since it is originally said to be surrounding the integrated circuit (lines 4 and 5 of claim 1).

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 recites the limitation "wherein the dielectric material is selected from ..." in lines 1 and 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 11 contains the trademark/trade name TEFLON. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe the type of

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dielectric used on the grounding arch, and, accordingly, the identification/description is indefinite.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6, 7, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakamura (US 6,054,759).

Regarding claim 1, Nakamura et al. disclose in Figures 1 through 4, an integrated circuit device comprising:

an integrated circuit [2] having a plurality of grounding pads [10, column 4, lines 13-43], signal pads [6], and power pads [10, column 4, lines 13-43]; and a package [12,14a] for mounting the integrated circuit [2] and including a conductive path having at least one reference trace [15a, 15b, column 4, lines 33-43] surrounding the integrated circuit [2] and having a grounding arch [16b] disposed over the integrated circuit [2].

Regarding claim 2, Nakamura disclose in Figures 1 through 4, the integrated circuit device of claim 1, wherein the reference trace [15] is coupled to at least one of the following: a voltage reference [15a, column 4, lines 33-43], a ground reference [15b, column 4, lines 33-43].

Regarding claim 3, Nakamura disclose in Figures 3 and 4, the integrated circuit device of claim 1 wherein, the grounding arch [15b] has an area comparable to the area of the integrated circuit device [2].

Regarding claim 6, Nakamura disclose the IC device of claim 1, wherein Figures 1 through 4 show the grounding arch [16b] is coupled to at least one grounding location on the integrated circuit device [10, column 4, lines 13-43], wherein the grounding location includes, the grounding trace [15b] and grounding pads [10, column 4, lines 32 43].

Regarding claim 7, Nakamura disclose the IC device of claim 6 wherein Figures 1 through 4 show the grounding location [location where bonds 10 are made to 15b] further includes a location about a center region on the integrated circuit device [2].

Regarding claim 10, Nakamura disclose the IC device of claim 1 wherein figures 1 through 4, show the grounding arch [16b] is coupled to the grounding location [10 connected to 16b] with at least one of the following: solder and eutectic metal bond [column 5, lines 13-17, note: solder is a eutectic metal bond, which is a low melting point metal bond].

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura in view of Huang et al. (US 6,703,698).

Regarding claim 12, Nakamura disclose in Figures 1 through 4, a method for controlling impedance of bond wires in packaging a semiconductor device die in a package, the method comprising: defining locations of signal and power/ground pads [area under 16a/16b] on the device die [2]; defining grounding trace locations on the package [15b]; bonding the signal pads [6] and power/ground pads [10] of the device die [2]; providing a conductive path including a ground arch [16b] over the bond wires [4] and grounding trace [15b] locations and encapsulating [9] the device die [2].

Nakamura does not show encapsulating the ground arch. Huang et al. do disclose the encapsulation [250] of a grounding arch [230] and die [210]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the encapsulant which envelops the arch as well as taught by Huang in the device of Nakamura, in order to further protect the metal ground arch from corrosion that would inhibit its optimal operational characteristics.

***Allowable Subject Matter***

Claims 4, 5, 8, 9, and 13-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Fax / Telephone Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eduardo A. Rodela whose telephone number is (571) 272-8797. The examiner can normally be reached on M-F, 9:00AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Eduardo A. Rodela  
Examiner

